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1(Once amended). A device comprising:

a nanostructured anodic alumina substrate having two sides, wherein said anodic alumina substrate comprises substantially parallel nanoscale pores; [and]

wherein each side of the alumina substrate has at least one deposited layer [electrodes formed on one or both sides of the anodic alumina substrate] substantially perpendicular to the nanoscale pores; and

wherein at least one of said deposited layers comprises an electrode.

2(Once amended). The device of claim 1, wherein said device comprises [one or more sensors, wherein when more than one sensor is present the device comprises a sensor array] a sensor.

6(Once amended). The device of claim 1, wherein said anodic alumina substrate comprises a sensing material inside the nanoscale pores [forming a sensing element].

11(Once amended). The device of claim [2]1, [wherein at least one of said sensors] wherein said device further comprises a microheater [formed on said the anodic alumina substrate].

12(Once amended). The device of claim [10]1, wherein said device further comprises[:] an insulating layer [formed between one of the sensing electrodes and microheater].

17(Once amended). The device of claim [2] 1, wherein the anodic alumina substrate has a thickness of 0.1 μm to 500 μm .

18(Once amended). The device of claim [2]1, wherein said nanoscale pores

have a diameter of 1 nm to 500 nm.

19(Once amended). The device of claim [2]1, wherein said nanoscale pores are substantially uniform in diameter.

20(Once amended). The device of claim [6]1, wherein said [sensing material comprises a] layer [having]has a [thickness]thickness in the range of 0.1 nm to 500 nm.

27(Once amended). A method of making a [sensor] device comprising the steps of:

forming an anodic alumina film on an aluminum substrate, wherein said anodic alumina substrate comprises substantially parallel nanoscale pores; micromachining the anodic alumina film to obtain [sensor or sensor array substrates] two surfaces by a technique selected from the group consisting of anisotropic etching and localized anodization; and

[forming a sensing and microheater electrodes on the anodic alumina substrate, wherein the said electrodes are substantially perpendicular to the nanoscale pores;]

depositing at least one layer on each of the surfaces of the anodic alumina film; wherein at least one layer of the deposited layers is an electrode.

29(Once amended). The method of claim 27, said method further comprising the step of:

depositing [a sensing] another material in the nanoscale pores of the anodic alumina substrate.